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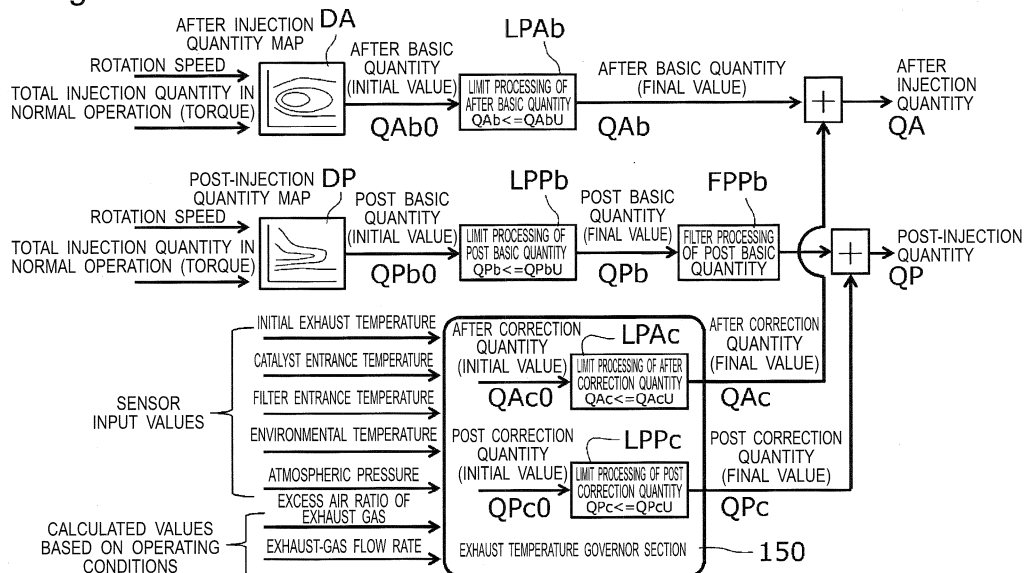
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(54) **Exhaust gas purifying apparatus with post fuel injection quantity control**

(57) Provided is an exhaust gas purifying apparatus capable of making a filter entrance temperature reach a target temperature while suppressing excessive temperature increases and release of hydrocarbon even upon extension of the exhaust path length or decreases in outside air temperature. The exhaust gas purifying apparatus includes an oxidation catalyst (18) and a filter (19) that are placed in an exhaust path (5) of an engine (1),

a fuel injection device (13) for injecting fuel in accordance with a fuel injection pattern, and a control device (50) configured to be capable of setting the fuel injection pattern including post-injection (QP), wherein an upper-limit value of post-injection quantity (QPbU, QPcU) increases with decreasing outside air temperature and/or with elongating path length of the exhaust path (5).

Fig.8





EUROPEAN SEARCH REPORT

 Application Number
 EP 14 17 6414

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2010/236222 A1 (GOMEZ III NICASIO [US]) 23 September 2010 (2010-09-23)	1,2	INV. F02D41/40
A	* paragraphs [0024], [0028] - [0035]; figures *	3-5	ADD. F02D41/02 F02D41/14
X	JP 2006 316743 A (HONDA MOTOR CO LTD) 24 November 2006 (2006-11-24)	1	
A	* paragraph [0023] - paragraph [0038]; figures 1,2,3 *	2-5	
A	EP 1 978 219 A1 (ISUZU MOTORS LTD [JP]) 8 October 2008 (2008-10-08)	1-5	
A	* paragraph [0039] - paragraph [0070]; figures *		
A	EP 2 184 469 A2 (HONDA MOTOR CO LTD [JP]) 12 May 2010 (2010-05-12)	1,2	
A	* paragraphs [0073], [0089] - [0091], [0094], [0099] - [0104], [0115] - [0121]; figures 1,3,12,14 *		
A	KANDYLAS I P ET AL: "Engine exhaust system design based on heat transfer computation", ENERGY CONVERSION AND MANAGEMENT, ELSEVIER SCIENCE PUBLISHERS, OXFORD, GB, vol. 40, no. 10, 1 July 1999 (1999-07-01), pages 1057-1072, XP004162444, ISSN: 0196-8904, DOI: 10.1016/S0196-8904(99)00008-4 * section 2 on page 106, section 2.2 on page 1063 *	3-5	TECHNICAL FIELDS SEARCHED (IPC) F02D F01N
A	EP 0 945 608 A2 (DEGUSSA [DE] OMG AG & CO KG [DE]) 29 September 1999 (1999-09-29) * the whole document *	1,3-5	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 8 May 2015	Examiner Aign, Torsten
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	



Application Number

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-5(partially)

Variable post fuel injection limit value setting in accordance with potential exhaust system heat loss.

2. claims: 1-5(partially)

Variable post fuel injection quantity setting with filtering processing.

3. claims: 1, 3-5(all partially)

Exhaust gas parameter based estimation of an exhaust path length.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 14 17 6414

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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08-05-2015

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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82